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AMENDMENT 18 APR 2006

(amendment based upon the provision of Article 11 of said Law)

To: Examiner of the Patent Office

1. Identification of the International Application

PCT/JP2004/017039

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4. Item to be amended: Description and Claims

5. Subject Matter of Amendment:

In the Written Opinion of International Searching Authority
dated March 21, 2005, claims 1, 2, 4 to 10, 12 and 13 are indicated as

being not to involve an inventive step in view of JP10-93868 (D1), JP8-256293 (D2) and JP8-116044 (D3). However, claims 3, 11 and 14 are recognized as being neither disclosed and in any of the cited documents nor obvious to a person skilled in the art. Amended independent claims 1 and 8 have incorporated a limitation of claims 3 and 11. None of the cited documents neither discloses nor suggests that each of the pixels includes semiconductor elements connected to each of the signal reading wirings, and each of the signal reading wirings is selectable based on an actuation of the semiconductor element as defined in amended claims 1 and 8. Accordingly, all of the claims would involve an inventive step.

6. List of Attached Documents:

- (1) Replacement sheets of pages 6, 6/1, 39, 39/1, 40, 40/1, 41 and 41/1

high-performance radiation image pick-up device and a method therefor, and an inexpensive and high-performance radiation image pick-up system which are capable of freely switching sensitivity over to
5 another one in correspondence to a situation and an object of the image photographing to flexibly cope therewith, i.e., capable of carrying out both still image photographing and moving image photographing for example which are largely different from each
10 other in dosage of exposure to radiation and which are also different in required sensitivity so as to meet that request.

A radiation image pick-up device of the present invention includes: a plurality of pixels disposed in
15 matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges; and a signal output circuit for outputting signals from the pixels, in which a plurality of signal reading
20 wirings through which the pixel and the signal output circuit are connected to each other are provided for each pixel, and in which each of the pixels includes semiconductor elements connected to each of the signal reading wirings, and each of the signal
25 reading wirings is selectable based on an actuation of the semiconductor element.

In further aspect of the radiation image pick-

up device of the present invention, the photoelectric conversion element includes a wavelength conversion member for performing wavelength conversion on incident radiation.

CLAIMS

1. (Amended) A radiation image pick-up device comprising: a plurality of pixels disposed in matrix, each of the pixels including at least one
5 photoelectric conversion element for converting incident radiation into electric charges; and a signal output circuit for outputting signals from the pixels, the radiation image pick-up device being characterized in that:
- 10 a plurality of signal reading wirings through which the pixel and the signal output circuit are connected to each other are provided for each pixel, and
- in that each of the pixels includes
- 15 semiconductor elements connected to each of the signal reading wirings, and each of the signal reading wirings is selectable based on an actuation of the semiconductor element.
- 20 2. A radiation image pick-up device according to claim 1, characterized in that the photoelectric conversion element includes a wavelength conversion member for performing wavelength conversion on incident radiation.
- 25 3. (Amended) A radiation image pick-up device according to claim 1, characterized in that the

signal reading wirings is freely selectable based on the actuation of the semiconductor elements according to a dosage of the radiation.

5. 4. A radiation image pick-up device according to claim 3, characterized in that at least one of the

semiconductor elements is a source follower.

5. A radiation image pick-up device according to claim 1, characterized in that a signal reading
5 circuit for reading out a signal from the pixel is provided to each of the signal reading wirings.

6. A radiation image pick-up device according to claim 1, characterized in that a signal reading
10 circuit for reading out a signal from the pixel is provided in common to the signal reading wirings.

7. A radiation image pick-up device according to claim 1, characterized in that the two signal reading
15 circuits are provided.

8. (Amended) A radiation image pick-up method comprising:

using a device which includes: a plurality of
20 pixels disposed in matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges; and a signal output circuit for outputting signals from the pixels, the radiation
25 image pick-up method being characterized in that:

said device includes respectively semiconductor element connected to each of the signal reading

wirings

the semiconductor device is operated such that
any one of a plurality of signal reading wirings
which are provided for each pixel and through which
5 the corresponding pixel and the signal output

circuit are connected to each other is selected and used in correspondence to a photographing mode to be used.

5 9. A radiation image pick-up method according to claim 8, characterized in that the photoelectric conversion element performs wavelength conversion on incident radiation, and converts the conversion results into electric charges.

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10 10. (Amended) A radiation image pick-up method according to claim 8, characterized in that the semiconductor device is operated such that any one of the plurality of signal reading wirings is selected
15 in correspondence to magnitude of a dosage of radiation.

 11. A radiation image pick-up method according to claim 9, characterized in that each of the pixels
20 includes semiconductor elements connected to the plurality of signal reading wirings, and at least one of the semiconductor elements is a source follower, and when in case of the photographing mode involving a low dosage of radiation, the signal reading wiring
25 having the source follower is selected.

 12. A radiation image pick-up system,

characterized by comprising:

a radiation image pick-up device as claimed in
claim 1;